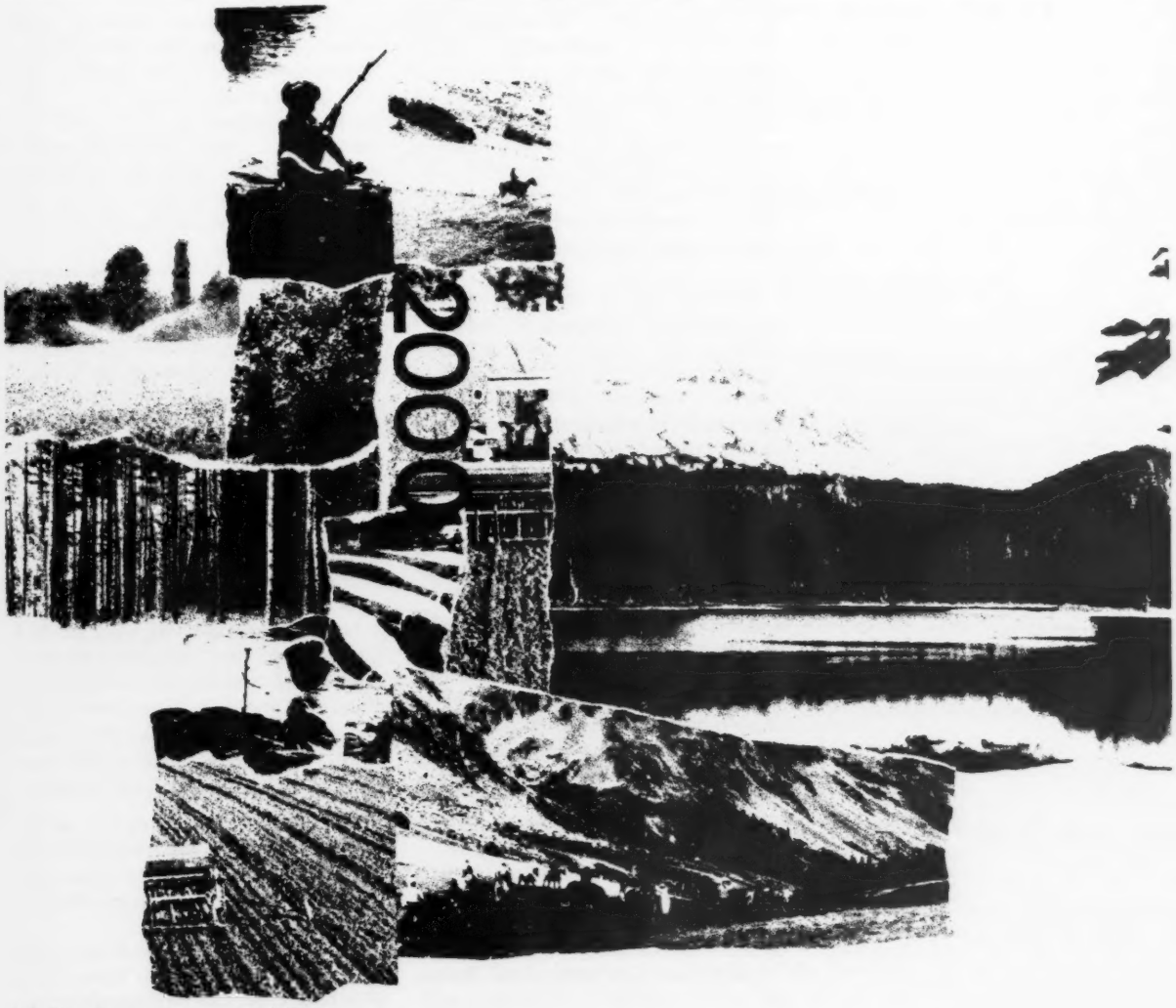
FARM INDEX

U.S. Department of Agriculture
September 1976



U.S. Land and Water: Assessment through 2000 A.D.

Outlook

If U.S. farm exports fail to reach a new crest in the new fiscal year, they will fall just a ripple short of breaking the 1976 record. USDA's mid-August forecast called for agricultural export sales of about $22 billion in fiscal 1977, versus $22.15 billion in 1976.

Keep in mind, however, that the fiscal years in question are not exactly comparable. The 1977 year begins on October 1, whereas under the old calendar the U.S. fiscal year commenced on July 1.

ERS is not issuing any forecast for the July-September 1976 period. And that's a time when our agricultural exports will be exceptionally heavy, due in part to big grain shipments to the U.S.S.R. under purchase agreements calling for delivery prior to October 1, 1976.

Assuming U.S. farmers do in fact sell $22 billion abroad next year, the commercial trade balance (exports less imports) would read about $9 billion in our favor, not quite as good as last year when we were $10.7 billion in the black.

But it's not so much that we're importing more agricultural products than before. We're only paying more for them. Most of the 16-percent surge in imports next year—which may bring the total import value for farm products to almost $12 billion—will mirror steeper prices.

Here's a brief rundown of export prospects by major commodities:

Grain and feed: $10 billion in 1977, down from $11.9 billion in fiscal 1976.

Oilseeds and products: $5.2 billion, up from $4.6 billion.

Fruits, nuts, and vegetables: About the same as last year's $1.4 billion, with wine shipments nearly double 1976's $15 million.

Cotton: $1.6 billion, up sharply from 1976's $882 million.

Tobacco: $1 billion, a shade higher than last year's $917 million.

Sugar and tropical products: $400 million, down a bit from $415 million.

Tonnage-wise, exports of wheat and feed grains are expected to slip . . . soybean and oilmeal exports should hold their own . . . and cotton will stage a major comeback. Price-wise, unit values are apt to nudge lower for grains, but higher for cotton, soybeans, and other oilseed products.

Prime reasons why American farmers will be able to keep exports at near-record levels: economic growth and shorter food supplies in the developed countries. Import demand for primary commodities has also strengthened in the developing world, where export prices are generally higher now for food and agricultural raw materials.

More than a third of U.S. farm exports will be moving to Western Europe. Shipments should set a new high of nearly $8 billion, thanks mainly to fatter sales of feed grains and protein feed.

Japan's purchases, figured at $3.5 billion in fiscal 1977, may also splinter all records, with most of the credit going to beef, feed grains, soybeans, and cotton.

Canada will take about $1.5 billion worth, up from $1.4 billion last year. Gainers: Live cattle, beef, and soybeans.

The U.S.S.R. is slated to buy an estimated $1.3 billion, down from 1976's $2 billion. Grain is expected to come in for almost three-fourths, soybeans for most of the rest.

U.S. farm exports to Latin America will drop again to $1.7 billion from 1976's $2.16 billion, because of expanding crop production in many countries.

Sales to Eastern Europe will probably trail last year's $1.1 billion, despite some increase in volume of U.S. grain exports.

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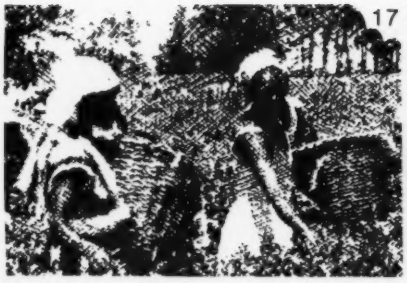

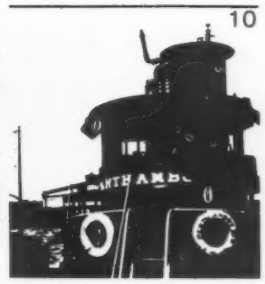

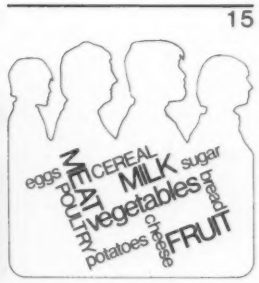

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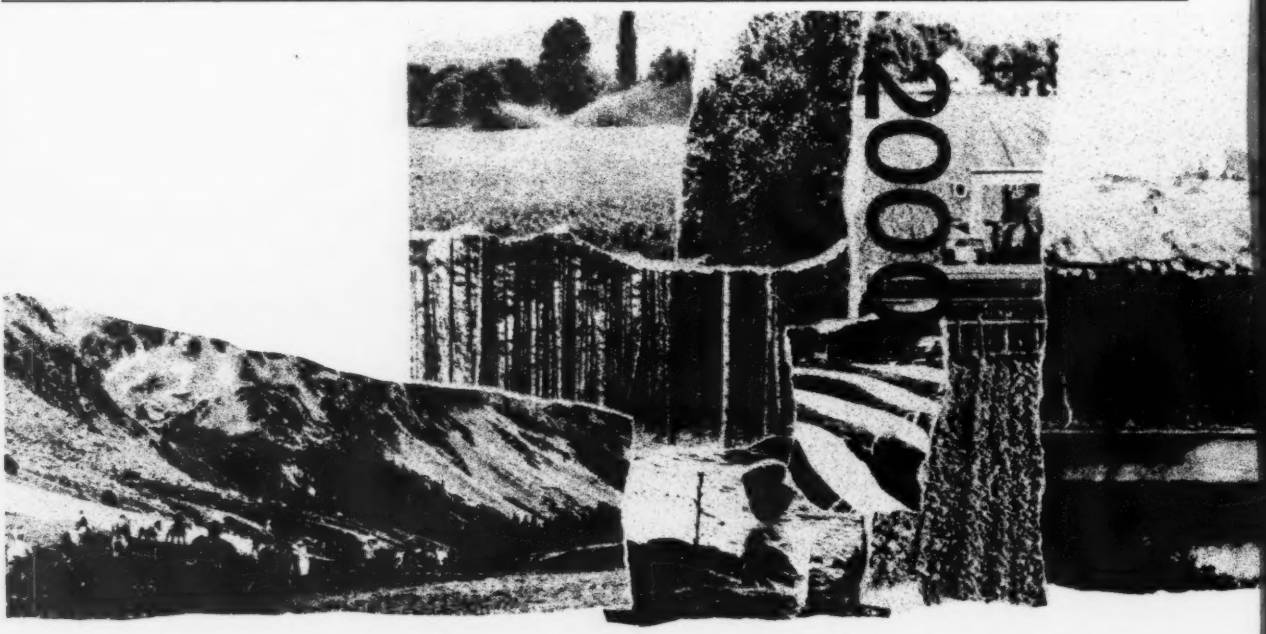
U.S. Land and Water: Assessment through 2000 A.D.



Does the U.S. have enough land and water resources available to meet growing domestic and world food demands in coming years?

To a world already experiencing hunger pangs, the answer to that question may be critical.

And that answer is apparently "yes"—at least through the turn of the 21st century, 24 years from now.

By the year 2000, U.S. farmers will be using 84 percent of available cropland, and about 57 percent of western water resources, according to a preliminary USDA report prepared for the U.S. Water Resources Council's 1975 National Water Assessment.

Benchmark trend. The study, conducted with considerable ERS research input, focused on the "benchmark-trend" future projection for U.S. land and water resources in 1985 and in 2000, and examined five alternative "futures" based on major shifts in policy or demand that could influence the outcome. The USDA report was one of several used by WRC to evaluate adequacy of water supplies to meet demands for water by all sectors.

The benchmark trend indicates that farmers will use about 337 million acres of the 396.9 million acres available in 1985, and 345 million of the 398.9 million acres of cropland expected to be available in the year

2000—a 4-percent increase in percentage of available cropland used.

Water projection. The benchmark trend projection is also encouraging in the area of water resources. By 1985, about 60 percent of the water available for farming is expected to be used, with the percentage decreasing to 57 percent in the year 2000, due to a slight increase in irrigation efficiency. Great disparities exist in available water resources in different regions. Many western areas are already using almost all of their water, while other areas have a vast abundance.

Perhaps the sigh of relief over the encouraging statistics should be tempered. The study notes that many unforeseeable events will occur by 1985 and 2000 that cannot be reflected in the projections, thus even the benchmark trend "should not be viewed as a prediction or forecast of what will actually happen by 1985 and 2000. Instead, the projection should be viewed and interpreted as an indicator of the likely outcome if the assumptions portray a reasonable outline of future events."

A major unknown factor is how people will respond to new situations. Although projections of past farmer and consumer reaction can be used in anticipating future reactions, the human element is, of course, unpredictable.

Assumptions. In determining the benchmark-trend projections, researchers used these assumptions:

1. Land available for agricultural use was expected to be about equal to acreage identified in the updated 1967 Conservation Needs Inventory, or 1.3 billion acres with about 400 million acres in cropland. Losses of acreage to energy development such as strip mining are expected to be temporary, with land returning to agricultural use after reclamation. About 12 million acres are expected to be converted to urban uses during the next 24 years.

2. Conversion of wet soils previously used for pasture and forest land to cropland is expected to continue. Farmers have historically made such conversions according to their expected costs and returns.

3. Irrigation will expand as market conditions for farm commodities increase, and as water supply permits. Potential new irrigation land by 2000 was estimated at 5.3 million acres—1 million acres served by new Bureau of Reclamation projects, and 4.3 million acres privately developed as determined by past trends.

4. Supply of water available to agriculture was projected on a base amount equivalent to 1971-73 average use plus 70 percent of the remaining unused surface flow during the main irrigation season.

5. Small improvements in irrigation efficiency associated with current irrigation practices are expected to occur in the future. Widespread application of new technology to achieve significant increased irrigation efficiency will be stifled without changes in water rights distribution or major public program incentives. Also, irrigation water use rates used in the study may overstate quantities of water applied per acre in a dry year by the assumption that irrigation rates necessary to achieve optimum plant growth be used, thus inflating estimates.

6. Commodity demand projections were based on domestic consumption patterns and exports of agricultural commodities as perceived in 1974. Export levels used in the study were generally below current ERS projections.

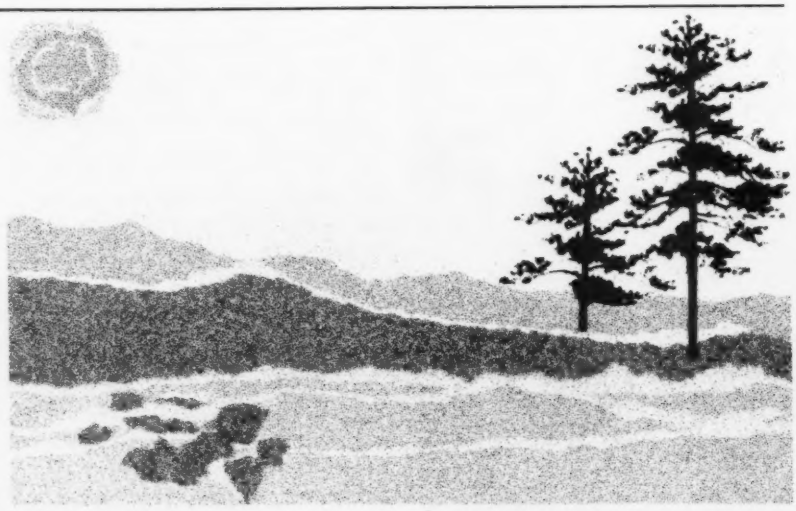
7. Soil erosion losses should continue to abate with a continuation of present policies and programs that encourage use of soil conservation practices. Losses for 1985 were assumed to be no greater than 10 times the "T" value ("T" value reflects the maximum annual soil loss that can occur on a given acre of land and still main-

tain its productivity), or 40 tons per acre per year, whichever is less. By 2000, the loss was set at two times the "T" value to reflect widespread adoption of conservation practices to control sediment and meet environmental water quality standards.

8. Regional cropland adjustments are expected with shifts in location of production due to new technology, processing, and transportation of food and fiber. Since developments rarely affect all regions uniformly, the interregional comparative advantage for producing various commodities changes over time. In the study, researchers took into account delays in the adjustment process due to resource immobilities, reluctance of farmers to shift to other occupations, and political reality of the continuance of agriculture as an economic factor in traditional farming areas.

Constraints. Even a major shift in production of a given crop is limited by such constraints. Thus in 1985 a commodity in a given region was limited to a 100-percent acreage increase over 1969 acreage, while a fading commodity could occupy no less than 70 percent of the 1969 acreage. By 2000, the maximum increase was six times the 1969 figure, while the declining commodity could not occupy less than 40 percent of 1969 acreage.

After applying these assumptions in the study, researchers were able to project agricultural resource needs in 1985 and 2000. Here are major areas covered in the projection and some of the key conclusions:



Land use patterns: The Nation is expected to use about 80 percent of its total available cropland in 1985 and 84 percent in 2000. Harvested acreage will increase from 302 million acres in 1971 to 319 million acres in 1985, and to 334 million acres in 2000.

Regional shifts. Some significant regional shifts in farming are anticipated. In a breakdown by water resource regions, New England's harvested crop acreage would drop to 45 percent of the 1971-73 total by 1985, and to 39 percent in 2000. Meanwhile, the Texas Gulf area harvested crop acreage would increase to 139 percent of the 1971-73 total in 1985, and then taper to 125 percent in 2000.

In 1985, these water resource regions are expected to have significant increases in harvested crop acreage compared to the 1971-73 base period: Ohio (116 percent), Upper Mississippi (112), Lower Mississippi (110), Souris-Red Rainy (111), Arkansas-White-Red (120), Texas Gulf (139).

Significant declines are expected in New England (45), Rio Grande (78), Upper Colorado (77), Great Basin (88), and Columbia-North Pacific (87).

Others are stable. Other water resource regions were projected to have a change of less than 10 percent, plus or minus.

In the year 2000, still other significant shifts are expected: South Atlantic Gulf acreage will soar to 130 percent of 1971-73 base acreage, Great Lakes to 151 and Souris-Red Rainy to 128, and Arkansas-White-Red to 131, and the Texas Gulf harvested crop acreage will decrease from 1985, although still 25 percent above 1971-73.

The extent of cropland used also has vast regional differences, with more than 90 percent of available

acreage farmed in Mid-Atlantic, Ohio, Upper Mississippi, Lower Mississippi, Souris-Red Rainy, and Upper Colorado, in 1985.

In that same year, regions with less than 80 percent of cropland acreage in use include New England, South Atlantic-Gulf, Tennessee, Rio Grande, and Columbia-North Pacific.

Agricultural water use. Available water supplies will be a major factor in determining the extent of farming in several areas. In both 1985 and 2000, the Upper Colorado and Great Basin regions will fully utilize all available water, while the Rio Grande and Lower Colorado regions will use most of their supplies. In other regions, water supplies appear adequate to meet the Nation's projected level of food and fiber in 1985 and 2000.

Western water problem. Western States are, of course, more sensitive to water availability. In 1971-73, 37.1 million of the 41.7 million irrigated acres in the U.S., or 89 percent, were located in the 9 western water regions. Potential for expanding that acreage is limited by availability of water.

Irrigated acreage in the 9 western regions was projected to increase from 37.1 million acres in 1971-73 to 38.5 million acres in 1985. Irrigation water depletions, primarily in western Texas, offset increases elsewhere and result in a projected decrease in irrigated acreage to 37.8 million acres in 2000.

Unused cropland. Large acreages of currently arable but uncropped land will still exist in future years. The land provides cover for wildlife and is in demand for its recreational capabilities and scenic beauty.

The environmental impact from changes in the quantity of unused cropland may be significant. Between 1985 and 2000, total acreage of unused cropland is expected to decline from 59.3 to 53.8 million acres.

Besides the negative impact on wildlife, cropping such land can cause further environmental damage because it is generally marginal and thus erosive in nature. But in 2000, more restrictive erosion control should help protect the environment by reducing erosion.

Wet soils. A major potential source of additional cropland lies in wet soil acreage that could be cleared and/or drained if farmers found it to be profitable. About 3.8 million acres of wet soil may be developed by 1985, with 10.5 million acres added by 2000. The study included only acreage that can be cleared or drained by a private farm operator, thus excluding marshes and coastal wetlands that are beyond an individual's capability. The greatest increase is a sixfold jump in drainage in the South Atlantic-Gulf region between 1985 and 2000.

In other future alternatives examined in the USDA study, the availability of land and water became much more critical.

Alternative projections. A high export alternative, in which foreign demands for U.S. agricultural products were intensified, would result in the use of 98 percent of all available cropland by 1985, with a slight slackening to 93 percent of the cropland base by 2000. Cropland requirements would become so intense that all but 9 percent of potentially arable wet soils in pasture and forest would be converted to cropland.

The environmental protection future reduced agricultural water supplies by 60 percent, resulting in virtually full use of supplies available to agriculture. All but 1.2 million acre-feet of the 65.8 million acre-feet available in the 9 western regions would be used.

Promising conclusion. Yet, the outlook is promising under the assumption scenario of the benchmark trend alternative future. The conclusion of the benchmark trend (Modified Central Case) states:

"The conditions in the agricultural sector reflected by the results of the Modified Central Case analysis indicate that the resource base is adequate to meet projected food and fiber demands under foreseeable conditions. There would be, however, many national and regional structural adjustments to be undergone.

"In many areas, water supply limitation will be the most significant restraint on agricultural expansion. However, consideration of adverse environmental impacts from agricultural production activities may ultimately prove to be the major constraint on resource development in the next 24 years."

[Based on the preliminary draft of the study, "Agricultural Resource Assessment System," prepared for the Nationwide Analysis portion of the Water Resource Council's 1975 National Water Assessment, by Natural Resource Economics Division, Soil Conservation Service, and Forest Service.]

U.S. Cities . . . Narrowing the Racial Gap

The 1960's were a kaleidoscope of images—Beatlemania, the Vietnam War, space heroics, political assassinations, and giant social strides for whites and racial minorities alike.

Over the 10-year period, both whites and minorities improved their levels of education, occupation, and income. Even so, substantial disparity remained between the races.

Using county-level data from the U.S. Census, ERS determined that from 1960 to 1970 racial differences in demographic and socioeconomic status were greater in rural areas and small towns than in metropolitan centers.

More opportunities. This can be explained, in part, by the fact that metropolitan areas have larger minority populations—in 1970, the average size of the minority population in urban areas was 35,700, compared with 4,300 in less urbanized areas—and therefore offer greater opportunities for racial minority professionals, businessmen, and other skilled workers to be supported by the minority population.

Between 1960 and 1970, the median age of whites was greater than that of racial minorities in both metropolitan and nonmetropolitan areas, although this differential was considerably higher in less urbanized counties. Throughout the decade, minorities averaged 5 years younger in cities, and 8-10 years younger in less urbanized areas.

Younger age for minorities. The younger age of the minority population was the result of a much higher proportion of persons under 20 and lower proportion of persons 40 and older. One reason for the larger percentage of young minorities was that they tended to have more children.

During the 1960's, females outnumbered males, regardless of race, and in all categories of urbanization. In general, the sex ratio is the result of the growing longevity of women, as well as the declining number of male immigrants to the U.S. and the underreporting of minority males in metropolitan areas in the U.S. Census.

Educational gains. Although both whites and minorities made advances in education during the 1960's, the level of attainment was greater in metropolitan areas. For example, whites 25 and older averaged 12.2 years of school in more urbanized areas, compared with 10.8 years in rural areas and small towns. For racial minorities, the range was from 10.5 to 7.4 years.

By the same token, the difference in median years of school completed between whites and minorities declined from 2.8 in 1960 to 1.7 in 1970 in metropolitan areas, but increased slightly in nonmetropolitan areas, from 3.6 to 3.9 years.

Black migration. This difference was due, in part, to the continued movement of younger, better educated blacks from nonmetropolitan areas—especially in the South. For example, between 1960 and 1970, about a third of all blacks, aged 25 to 39, moved from the South, while hardly any whites of the same age moved away.

During the 1960's, a growing number of women of both races took off their aprons and joined the labor force. Prior to this time, a larger proportion of minority women had participated in the work scene, but during this period, white women joined the labor force at a substantially faster pace than the minority women.

Racial disparity declines. Consequently, racial disparity in labor force participation declined in all areas during the decade. In fact, by 1970, hardly any differential remained in nonmetropolitan areas—labor force participation was about 38 percent for minority women and 37 percent for whites—while in metropolitan areas the differential declined from 10 percent in 1960 to 6 percent in 1970.

Just the opposite was true for men. Between 1960 and 1970, the percentage of men—white and minority—in the labor force decreased in all levels of urbanization. However, the decline was greatest among minority men, and consequently, the gap between the races widened during the decade.

Greater differences. Where racial disparity was greater for working women in metropolitan areas, men found greater differences in nonmetropolitan areas. For example, white participation in the labor force ranged from about 75 percent in metropolitan areas to 69 percent in nonmetropolitan areas. For racial minorities, the range was somewhat larger, from about 67 to 57 percent.

By 1970, both races found themselves in more white collar jobs than 10 years earlier. Although this was true in both metropolitan and nonmetropolitan areas, racial disparity was greater in less urbanized areas. For instance, in 1970, 29 percent of the minority work force held white collar jobs in metropolitan areas, compared with about 52 percent of white workers. In nonmetropolitan areas, the percentages were 14 and 39.

Occupational structure. Upgrading the minority's occupational structure in metropolitan areas was achieved by more professional and clerical positions, and fewer operative and private household jobs. In urbanized nonmetropolitan areas—those counties having 20,000 or more urban residents—these same occupations were involved, but so was a substantial decline in the proportion of the labor force employed in farming.

Farming also decreased in less urbanized nonmetropolitan areas—counties with fewer than 20,000 urban residents—but in this case, the slack was taken up by increased employment in upper blue collar crafts and operative jobs—increases in white collar employment were of secondary importance.

Family income up. Family income was on the upswing in the 1960's in all residence categories and for both races, although racial minorities improved their lots at a faster pace than whites. Consequently, the ratio of minority to white income increased from 59 to 64 percent in metropolitan areas, and from 38 to 45 percent in nonmetropolitan areas.

However, in both metropolitan and nonmetropolitan areas, racial minority income in 1969 was less than what it had been for whites 10 years earlier, and in most cases, the dollar gap in family income increased during the decade.

Higher in metropolitan areas. Median family income was higher in metropolitan areas, while greater racial disparity in income was observed in nonmetropolitan areas. One major reason for lower incomes in less urbanized areas was their concentration of white elderly and minority youth—persons with less formal education, lower rates of labor force participation, lower occupational status, and greater reliance on extractive industries, such as farming.

In summary, the ERS study found that both whites and minorities improved their social and economic conditions during the 1960's, and that racial disparity was greater in nonmetropolitan areas for age, educational attainment, female labor force participation, occupation status, and family income.

[Based on "Urbanization and Racial Disparity, 1960 and 1970," paper presented to the annual meeting of the American Sociological Association, New York, August 1976, by David L. Brown, Economic Development Division.]

The Barge Connection

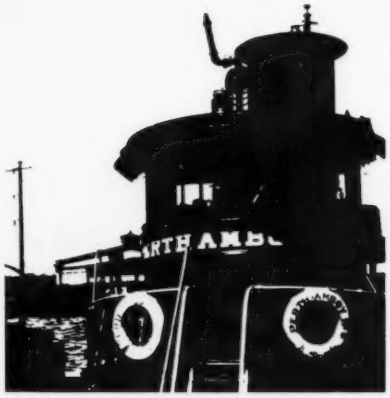
Floating agricultural goods down a river is as ancient as the history of man, but barges in America are relative upstarts—only since the 1820's when boats were towed from the Erie Canal down the Hudson River to New York.

The barge industry today, though, is a thriving one. Thanks to locks and dams, it has over 25,000 miles worth of navigable inland waterways throughout the country.

The Granddaddy. The Mississippi River system is the granddaddy of the waterways, accounting for 35 percent of the Nation's total mileage. In addition to the mighty Mississippi itself, it includes three tributaries: the Missouri River, the Illinois waterway, and the Ohio River.

Its success as the most intensively used route can be pinned to two factors: (1) depth—almost two-thirds of its 9,000 miles are at least 9 feet deep (the standard operating depth), and (2) year-round access—except for the upper stretch (from Minneapolis, Minn., down to the mouth of the Missouri River) where winter's ice closes the route for about 4 months of the year.

Agriculturally speaking, the system also receives a big boon by flowing right through America's breadbasket. In fact, within easy reach of the water route grows almost 75 percent of the Nation's grain and soybeans. Not surprisingly then, the system carried about three-fifths of the wheat and soybeans and nearly half the corn shipped by barge during 1973-75.



Other waterways. In addition to the Mississippi system, our country has four other waterways which are important in moving agricultural products: the Columbia, Tennessee, Arkansas, and James Rivers.

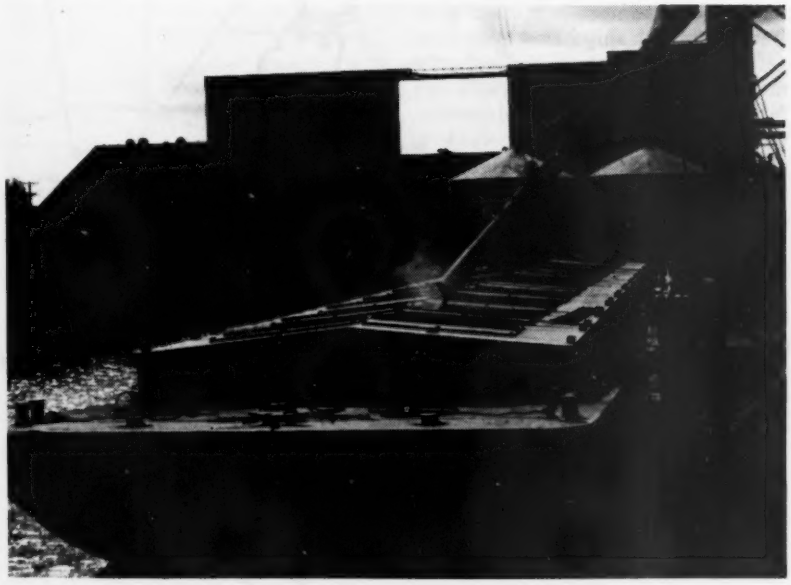
The Columbia River is the major export waterway outlet for grain, particularly wheat, on the Pacific Coast. The Tennessee and Arkansas Rivers are major grain-carrying arteries feeding into the Mississippi. The James River in Virginia transports virtually no grains but moves fertilizer.

Bulk agricultural commodities move up these waterways in hopper barges pushed by towboats and tugboats. The barges are fairly standardized, but tugs and tows vary, depending on water depths, lock and dam sizes, and the weight of the load.

Hopper barges. The hopper barge is usually a double-lined box, with the inner skin serving as the cargo hold. The open top makes loading and unloading relatively easy. Some of the barges are left open, but waterproof covers are put over those carrying grains or fertilizer.

Hopper barges come in three standard lengths: 175, 195, and 290 feet. (For the covered barges, only the latter two are standard.) The most popular size is the 195-footer, with a 1,500-ton cargo hold—or about the capacity of 25 conventional boxcars or 15 jumbo hopper railcars.

The most widely used covers are the lift-type and rolling ones. Lift covers are equipped with several hinged grain hatches so that grain can be loaded and unloaded without removing the cover. Rolling covers are mounted on tracks and can be opened to expose one-half of the cargo at a time.



More horsepower. Towboats and tugboats, though decreasing in number in the past few years, have been increasing in horsepower. Many of the new models boast 5,000 to 6,000-horsepower engines, with a capability of moving 40,000-50,000 tons.

The sizes of tows, however, are restrained by water depth and locks and dams. A uniform depth of at least 9 feet of water must be maintained for barges to be able to move together as one unit. And typically, barges are added to tows as they proceed downstream, particularly when hauling grains.

Most locks on major rivers such as the upper Mississippi, Ohio, Illinois, and Arkansas are 110 feet wide and 600 feet long. These dimensions allow tows of twelve 175-foot barges or six 195-footers, with 12,000 and 9,000 tons of cargo, respectively.

On the lower Mississippi—south of St. Louis—barge traffic is free of any encumbering locks or dams, and tows of 30-35 barges are commonplace. Such tows—one with thirty-five 175-foot barges for instance—can carry the equivalent of three 100-hopper-car trains, or 1,440 semitractor trailers, or a bulk ship weighing in empty at 10,000-14,999 tons.

Commercial importance. The Nation's waterways have become in-

creasingly important to commerce. In 1960, they carried 9 percent of the total commercial ton-miles being transported between cities; by 1974, they were carrying 11 percent. In terms of ton-miles of freight, the figure jumped 66 percent during the period.

And farm products, namely grains and soybeans, have had a hefty share in the increase. In fact, barge shipments of grains and soybeans shot up 172 percent during 1960-74. Soybean shipments alone went up 3½ times. Corn was close behind, with a threefold increase.

One big factor behind the boom in agricultural barge traffic has been the dramatic rise in grain exports in recent years. Since 1960, the overseas market has nearly tripled its order for grain and soybeans, thus placing a greater demand on all our internal transportation systems to move the increased tonnage to ports.

Export ports. Of the four major receiving areas for grain via barge, three are chiefly export ports. These are Baton Rouge, La., Vancouver, Wash., and near Portland, Ore., at the junction of the Willamette, Yamhill, and Columbia Rivers. The Baton Rouge port takes in almost all the barge-shipped soybeans and corn, but only 40 percent of the wheat. The Pacific ports receive two-fifths of the wheat moved by barge.

The fourth major grain-receiving area is on the Tennessee River. Grain and soybeans coming up this river are used mainly for feeding, milling, and crushing operations, rather than for export.

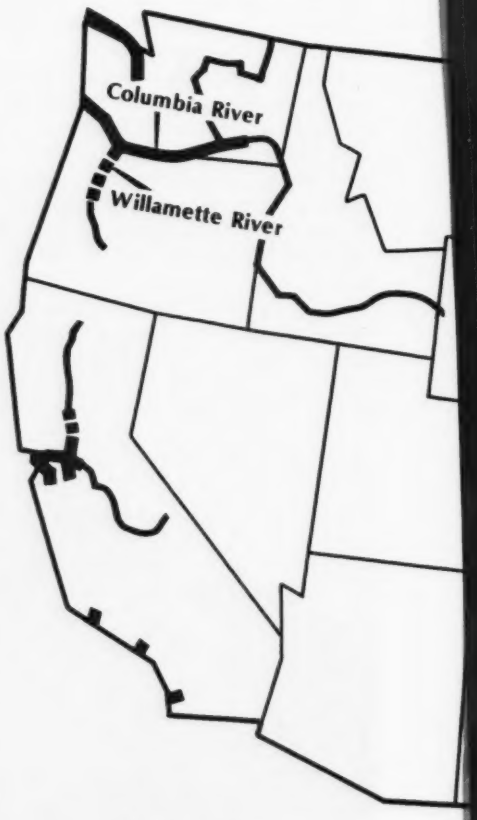
Agriculture's growing appetite for fertilizer has also given barge traffic a boost. Not only have the actual loads transported swelled, but the fertilizer in return has upped yields, resulting in more grain hauls. Too, fertilizer movements may serve as backhauls for grain shipments since much of the fertilizer is barged to the major grain-producing areas.

Fertilizer movements. Movements of phosphate rock and nitrogenous chemicals in particular have been up dramatically since the 1960's. And these two fertilizer ingredients are the main ones transported by barge, accounting for almost three quarters of all fertilizers shipped in 1974.

During 1966-74, shipments of nitrogenous chemicals jumped eightfold, hitting almost 2 million tons. Phosphate rock shipments more than doubled during the period, despite the fact that demand for the rock as raw fertilizer plummeted. However, barges were increasingly used to move the rock to fertilizer plants for conversion into phosphatic chemicals.

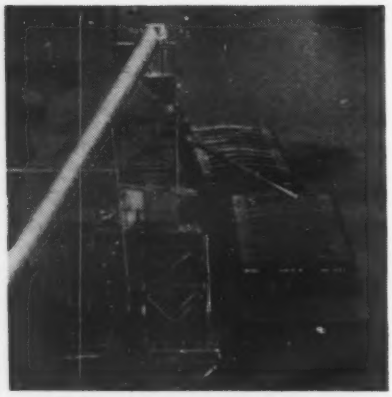
Most of the inland fertilizer traffic originates from one of four main points: Mobile Bay, Ala., Galveston Bay, Tex.; Baton Rouge, La.; or New Orleans, La. Two other shipping areas are the James River in Virginia and the Pamlico and Tar Rivers in North Carolina.

Unfettered rates. Rates charged for barging agricultural goods are relatively unfettered by Government regulation. The Transportation Act of 1940, though giving the Interstate



The Nation's waterways have become increasingly important to commerce. In 1960, they carried 9 percent of the total commercial ton-miles being transported between cities; by 1974, they were carrying 11 percent.

U.S. WATERWAYS



Commerce Commission greater power in prescribing rates for transporting commodities, did exempt water transport of dry and liquid bulk commodities—a category into which most grains and fertilizer products fall.

In 1974, over 80 percent of the farm products traveling by barge went by way of exempt for-hire carriers. Regulated carriers moved about 12 percent, and private, 6 percent. In comparison, all railroad freight traffic was regulated; 85 percent of the pipelines; and 43 percent of the trucks.

Since the exempt barge carriers aren't required to publish their rates or seek approval for rate changes, they can vary their rates to be competitive or to match seasonal changes in demand. This flexibility gives incentives to shippers to adjust their demands for services to the usual peak and slack periods, especially for grains.

To lessen the strain on barge availability, the carriers may charge premium rates during peak harvest periods and give discounts during the off-season. As a result, many shippers store their grain until the more favorable rates prevail, allowing the carriers to more efficiently use their equipment throughout the year.

Competition. The barge industry faces significant competition from both within and without. Price, obviously, is a main source of competition, but other factors figure in, such as speed and frequency of service, equipment availability, and shipper ownership and leasing arrangements.

Barges have two plusses in their favor: (1) They can usually travel longer distances with larger volumes than can other modes (their average length of haul for grains in 1974 was 1,179 miles) and (2) They have generally been able to offer roughly competitive rates in transporting agricultural commodities.

Costs of moving freight by barge averaged less than four-tenths of a cent per ton-mile in 1973. Rail costs were about 4 times higher. Trucks, on the other hand, had an overall average cost of 21.7 cents per ton-mile, but for the type of goods hauled by barges and railroads, the truck cost was only 5-7 cents.

Funding issue. A long-standing issue relating to water carrier costs is that of Federal funding. Since 1824, the Federal Government has financed construction, maintenance, and navigation projects on U.S. waterways, to an estimated tune of $8.3 billion.

Currently, annual outlays for such navigation projects and maintenance operations—administered by the Army Corps of Engineers—are about $350 million. Another $70 million goes to the Coast Guard each year for navigation and safety enforcement services.

Another issue—again involving money and waterway competitors—is that of deteriorating locks and dam 26 near Alton, Ill., on the upper Mississippi waterway.

Lock and dam controversy. In early 1976, a guidewall collapsed in the main lock, causing a tieup of barges from both directions. Though the lock is now reopened, the barge industry claims to have suffered losses of $250,000 a day for down time.

To stave off recurrence of such a situation, the Army Corps of Engineers has recommended constructing a 1,200-foot lock to replace the existing 600-foot and auxiliary 300-foot locks. Project costs were set at $400 million, and construction time, 8-11 years. The plan, however, is opposed by the railroads and environmentalists.

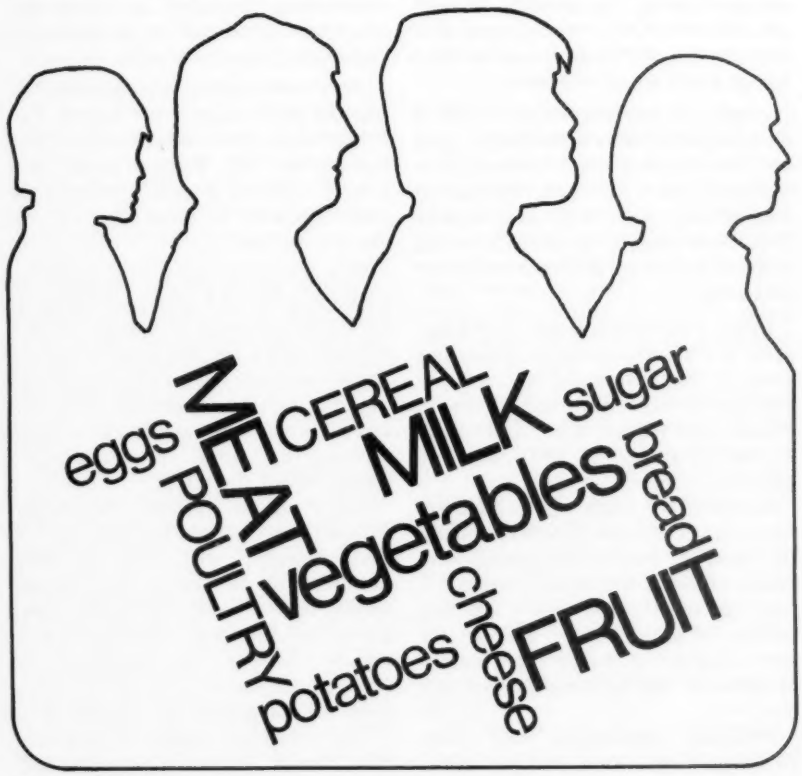
Congressional hearings have been held to decide whether the existing facilities should be repaired or if construction on the proposed lock should begin. Another proposal has been made to block construction of the new lock and dam until an economic and environmental impact study is completed and assessed.

The present structure is expected by the Corps' estimates to reach maximum capacity of 73 million tons a year by 1982. Now, the annual rate is about 50 million tons.

Here to stay. Despite such issues as the above, however, the barge industry appears here to stay—and as a major mover of agricultural goods, grains in particular. And if recent trends are any indication, further increases in demand for transportation services resulting from exports or fertilizer use are likely to be shared by the barge industry.

[Based on special material from Floyd D. Gaibler, National Economic Analysis Division.]

America's Changing Appetite



America's eating habits leave all sorts of tell-tale clues.

And from these clues, analysts have noted that shifts in the population mix during the last decade have had some interesting effects on what Americans have been eating, and will probably affect future eating habits, too.

Lowering birth rates, the coming of age of the post-World War II babies, and shrinking household sizes during 1965-75 were largely responsible for an increase in U.S. per capita food consumption. The most dramatic effect came from the drop in preteen children, low consumers of most foods except milk, and the sharp increase in numbers of teenagers and young adults, high consumers of most foods.

Smaller households. Also, since 1965, more and more Americans have been living alone or in two-person households. Three factors have been responsible: lower birth rates, a higher divorce rate, and an increasing tendency for young adults to leave their parents' homes and set up their own households. And these smaller households have helped to boost per capita food consumption, because statistics show that persons in small households tend to eat more apiece than those living in larger ones (because there are fewer low-consuming children and because more food may be wasted).

Projections to 1990, though, show a leveling off in the rise in per capita food consumption. By then, there will be a smaller proportion of teenagers and young adults and a higher proportion of older adults, particularly women, as they continue to outlast men.

The projections, of course, don't take into account such factors as available food supplies or prices, but assume certain constant trends. That is, children will continue to consume more milk but less other foods than adults; men and boys, on the average, will continue to eat more than women and girls; and senior citizens will eat still less than younger adults.

Changing mix. The food mix has undergone various changes, too, as demand has increased for some foods and waned for others during the past decade. And the average market basket of 1990 will be even different from that of today, based on population shifts.

Dairy products. Most of the 3-percent decline in per capita consumption of this food group during 1965-75 can be explained by popula-

tion shifts—mainly a declining proportion of children and the resulting drop in milk drinking. This dropoff was partially offset, however, by the boost in ice cream and cheese consumption.

The greater numbers of teenage boys were responsible for the ice cream figures, but the jump in cheese consumption (35 percent) is more than demographic changes alone can account for. Only about 8 percent of the increase can be attributed to more older men and women in the populace; the rest may be an increased popularity of foods containing cheese, such as pizza, and a greater sophistication in taste for cheese as well as access to a greater variety of cheeses.

Fluid milk consumption is likely to continue its downhill trend, as the teenage population shrinks, older adults increase in numbers, and the birth rate remains stable or decreases. (This is despite the slight increase in milk drinking caused from decreasing household size.) Increases in ice cream and cheese intake will probably slow some, too. By 1990, therefore, population shifts alone could be responsible for a 2-percent decline in overall dairy product consumption.

Meat and poultry. In the last decade, increases in the proportion of high-consuming small households had a greater effect on poultry consumption than age of population; for red meat, the reverse is true.

Red meat intake was boosted by the high numbers of teenagers, particularly boys, and the increased proportion of adults—again, particularly male. For poultry, though, age has less of an impact (except that very young children obviously don't eat as much as older people).

Based on an increasing share of smaller households in the future, both red meat and poultry consumption will continue to increase, although at a slower rate than in the past decade. Too, the dropoff in the share of young men will hold back red meat consumption some.

Eggs. Demographically speaking, eggs are a phenomenon. According solely to population shifts, consumption should have increased in the past decade, and furthermore, continue to increase right on to 1990. But this isn't the case.

In 1965, the high egg consumers were men of all ages. However, during the past 10 years, this group—the prime target of cholesterol concern—has apparently cut down on egg eating, whether out of concern for their health or weight, or simply because of "eating breakfast on the run."

Potatoes, vegetables, and fruit. Although population shifts boosted potato consumption during the past decade, they are likely to have an opposite effect by 1990. Reason is: the greater share of older women, traditionally low potato consumers, and the increasing numbers of small households. Contrary to the usual trend, potatoes are one of the few foods eaten less by single-person households than larger ones.

However, persons living alone do eat more other vegetables and fruits than do other persons. Therefore, a continuing increase in fruit and vegetable consumption is projected, although at a slower rate.

Flour, cereal, and baked goods. During the past decade, per capita consumption of flour and cereal products has fallen off. Future population trends indicate a slight increase in consumption, followed by a net decline by 1990.

The effect, though, will vary by product and will hinge somewhat on the declining share of young men and teenage boys. As the proportions of these consumers decrease, cereal and bread consumption should slack off, but for other baked goods, more high-consuming smaller households should offset the effect.

Sugar and sweeteners. Sugar consumption per person rose during the last decade, with the swelling numbers of teenagers and young adults. And given the projection that young people will account for a smaller share of the population by 1990, per capita sugar and sweetener consumption should be on the decline.

This projection makes an assumption, though, that only time can tell. That is, that the taste for soft drinks developed by the teenagers of 1965 and later will dull with age (or be replaced by low-calorie beverages). But it is too early to tell if this will be the case, or if the penchant for soft drinks will remain with them throughout the years.

[Based on, "The Impact of Some Demographic Changes on U.S. Food Consumption, 1965-75 and 1975-90," by Corinne B. Le Bovit, National Economic Analysis Division, published in the National Food Situation, NFS-156, May.]

African Agricultural Safari

Africa—the second largest continent on the face of the earth—is known for a lot more than its untamed jungles and exotic wild animals.

It is a land of abundant natural resources—petroleum, diamonds, uranium ore, copper, iron ore—and a highly diversified agriculture. Roughly a third of the continent's total land area is devoted to farming.

It is also a land that, in recent years, has been plagued by drought, technological lags, inadequate food production, generally lower commodity prices, and strife as new nations emerged—the number of independent states has risen from 5 to 49 since 1960.

Drought eases. While strife continues in some nations, such as Angola, nature has eased its dry stranglehold on drought-stricken Ethiopia, Somalia, and Morocco.

On the whole, agricultural production was on the upswing in 1975 in such countries as Tunisia, Egypt, Ghana, Senegal, and Sierra Leone, while other countries, such as Algeria and the Republic of South Africa, lagged a bit in efforts to tap the rich crop potential.

Coffee, cotton, and cocoa beans are Africa's most important export crops, but the continent produces a number of other agricultural items.

A cornucopia of crops. Corn, millet, sorghum, rice, and wheat are some of the most widely produced cereal and grain crops. Among the important fruits are bananas, pineapples, dates, figs, olives, oranges, tangerines, and grapefruits. Popular vegetable crops include sweet potatoes, yams, cassava, tomatoes, onions, pulses, and cowpeas.

Other important African crops are grapes, coconuts, palm oil, tobacco, sugarcane, tea, and nuts—cashew, kola, macadamia, and peanuts.

The biggest market for African agricultural exports is the European Economic Community, followed by the European Free Trade Association, Japan, and the U.S. In 1975, agricultural exports to the U.S. totaled $821 million. U.S. agricultural exports to Africa were somewhat under $1.2 billion.

Agricultural output down. Total agricultural production in Africa declined slightly in 1975, from an index of 128 in 1974 (1961-65=100) to 127, and per capita food production fell about 2 percent.

Cocoa beans were the only one of the three major export crops to increase production in 1975—up 6 percent from the previous year. Coffee and cotton, on the other hand, were down, about 12 and 10 percent, respectively.

Of the three largest agricultural countries of Africa—the Republic of South Africa, Nigeria, and Egypt—only South Africa showed a decline in production in 1975, mainly because of smaller corn, sorghum, and oilseed crops. Angola and Morocco joined South Africa as the countries suffering the largest declines in production.

Agricultural situation. ERS sizes up the situation in some of Africa's most important agricultural regions:

Maghreb. Agricultural production throughout most of the Maghreb (Northwest) region of the continent

Coffee is pruned in Ivory Coast.

declined in 1975, mainly as a result of drought. *Algeria's* index of agricultural production was only 93, the third year in a row that it was less than the 1961-65 base. Shrinking production caused the country to import more food items—almost $1 billion worth in 1975. Wheat was the biggest import crop, followed by dairy products, sugar, and edible oils.

Morocco fared even worse—its index of agricultural production fell sharply from 146 to 118, and per capita food production was a record low.

Morocco's barley yields were down 39 percent. Production of citrus, wine, broadbeans, chickpeas, and sugar also suffered losses. Major agricultural imports in 1975 were wheat, sugar, and vegetable oils.

Tunisia was the only Maghreb country to increase agricultural production in 1975—indices for agricultural production and per capita food production were both at record highs. Wheat, sugar, and soybean oil were the most important agricultural imports, while olive oil, wine, citrus, and alfa pulp were the major Tunisian agricultural exports.

Sisal is prepared for planting in Ethiopia, a country recovering from drought.

Northeastern Africa. Agricultural production in *Egypt* increased about 4 percent in 1975, with larger crops of wheat, rice, corn, oranges, and vegetables. Cotton was the only significant crop to decline—from 441,000 tons in 1974 to about 400,000 tons in 1975.

Agricultural exports declined from a record $906 million in 1974 to about $750 million in 1975, due largely to lower prices for cotton and rice—Egypt's major export crops. The volume of shipments of these two crops was also down. Larger exports of onions, tomatoes, and fresh vegetables prevented the decline from being more severe.

Egypt's imports of agricultural goods skyrocketed to a record $1.5 billion in 1975—up from $310 million in 1973 and $1.05 billion in 1974. Wheat, flour, corn, cottonseed oil, tobacco, sugar, and livestock were the most important items.

Agricultural output in the *Sudan* in 1975 changed very little from the previous year, although there were shifts in the crops produced. Wheat and cotton production were down, while both millet and sorghum increased. Cotton is the country's major agricultural export, followed by peanuts, sesame seed, gum arabic, and dura. Sudan's balance of payments has been in deficit for the past several years, and with less cotton to export and high prices for im-

Moroccans harvest barley, a crop that suffered poor yields in 1975.

Kenyan plucks tea, a major crop.

Large heaps of peanuts are about to be fumigated for seed beetles in Senegal.

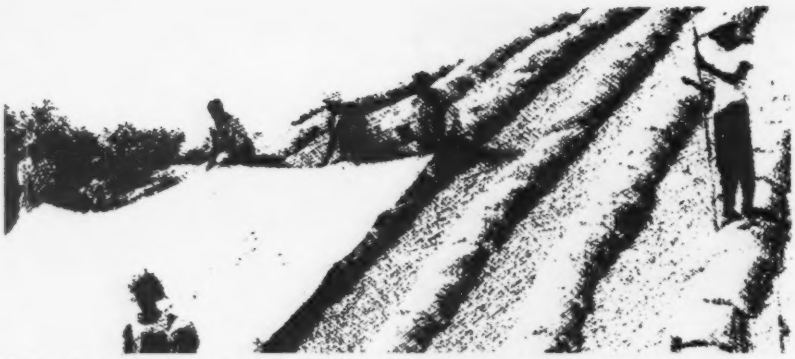
port goods, this deficit will surely increase in 1976.

Although drought conditions still prevailed in some parts of *Ethiopia*—the country was severely hit in 1973-74—production of grain and cereal crops and tobacco improved in 1975. Agricultural exports were up, with large increases in coffee and sugar. Major agricultural imports were food, beverages, and tobacco.

Rain came to drought-stricken *Somalia* in mid-1975, releasing the country—at least temporarily—from the worst drought in living memory. The livestock industry—the backbone of Somalia's economy and one of its principal earners of foreign exchange—was drastically damaged (at least half the total number of livestock were lost). However, high prices kept earnings at just below $40 million, about the same as in 1974. Although production of bananas—Somalia's principal cash crop—was down, their earnings also remained stable.

Tropical Africa. Cocoa is the kingpin of *Ghana's* agriculture, accounting for over 99 percent of the value of agricultural exports. The 1975 cocoa bean crop was 8 percent larger than 1974's, and total agricultural production was up from an index of 120 in 1974 to 126 in 1975. Cocoa production will likely continue to expand, as the Ghana Government recently announced that a farmer's income from cocoa will be exempt from income tax.

Although the *Ivory Coast's* 1975 production of coffee was only slightly larger than the previous year's, the



Young Ghana tribesmen dry cocoa beans, the country's major agricultural export.

country still continues to reign as Africa's leading coffee producer (it's the world's third largest producer, after Brazil and Colombia). On the other hand, 1975 coffee production in *Angola,* normally the second largest coffee producer in Africa, was less than half that of previous years.

Although greatly outvalued by petroleum exports in recent years, farm exports are still quite important to *Nigeria.* Extended fall rains in 1975 brought increased production of cotton, millet, sorghum, corn, rice, and cocoa beans. Unfortunately, the peanut crop was badly damaged by rosette disease, and Nigeria—traditionally the world's largest peanut exporter—had few peanuts and products to export from the 1975 crop.

Senegal had better luck with their peanut crop—1975's output was 34 percent larger than 1974's. The bumper crop helped them raise the index of agricultural production 14 percent over the previous year's, from 121 to 138.

Although the decline in the diamond industry, along with the high cost of petroleum imports, is causing severe balance of payments problems in *Sierra Leone,* agricultural production is on the upswing. The country is reportedly self-sufficient in poultry and eggs and is near that goal in rice.

Agricultural production was down in *Liberia,* from an index of 153 in 1974 to 146 in 1975, due largely to a lower estimate for rubber production. Agricultural production in both *Zaire* and *Zambia* was also down in 1975.

East Africa. Agricultural production increased very slightly in *Kenya* in 1975—up only about 0.6 percent from 1974—while per capita food production fell about 3 percent. Of the major crops, only corn, tea, and pyrethrum showed increases in both production and value. Wheat, rice, barley, coffee, sugar, and sisal all experienced decreases.

Tanzania's agricultural production in 1975 was up from the 1974 low, but did not recover sufficiently to reach the 1972 level. Although the corn crop was significantly larger than 1974's, it was still below domestic consumption levels, and some grains had to be imported. Coffee, cashew nut, and sugar production were up, while cotton production declined.

Southern Africa. The problems *Mozambique* experienced with its economy after achieving independence in June, 1975, included the agricultural sector. Production of corn, peanuts, sorghum, millet, rice, tea, sugar, cotton, and tobacco were all down. Cashew nuts and copra were the only important crops that continued at normal production levels.

Although 1975 was a bleak year for agriculture in the *Republic of South Africa*—production was down about 6 percent from 1974—agriculture still contributed favorably to the country's balance of trade. Agricultural exports were worth over 9 times as much as agricultural imports.

Corn is the granddaddy of South Africa's agricultural exports, followed by sugar, fruit, and wool. The country is the world's third largest exporter of corn, after the U.S. and Argentina, and competes heavily with the U.S. in the world export market.

Future levels of South African corn exports will depend, in part, on the degree to which corn will be used for animal feed in the country—South Africa is currently not self-sufficient in meat, and increasing local production through increased feeding is likely to be beneficial.

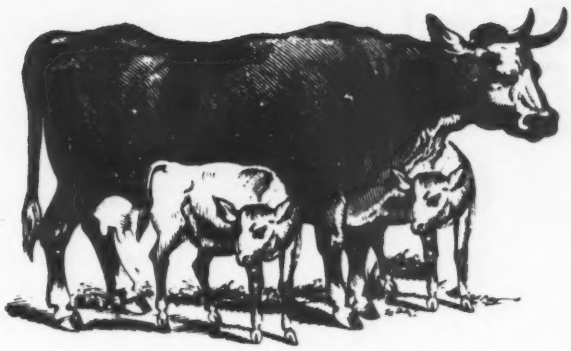
[Based on the manuscript, "The Agricultural Situation in Africa and West Asia: Review of 1975 and Outlook for 1976," Foreign Demand and Competition Division.]

U.S. Agricultural Trade with Selected African Nations
Calendar Year 1975

Country	U.S. Exports	U.S. Imports
	*million dollars**	*million dollars**
Algeria	216	0.2
Angola	10	77
Egypt	425	2
Ethiopia	4	46
Ghana	25	69
Ivory Coast	2	149
Kenya	10	32
Liberia	14	45
Morocco	73	3
Mozambique	4	33
Nigeria	97	31
Senegal	5	1
Sierra Leone	6	6
Somalia	4	—
South Africa, Rep. of	60	68
Sudan	31	3
Tanzania	43	23
Tunisia	43	1
Zaire	18	25
All other countries	66	207

*Rounded to nearest whole number.
Based on *U.S. Foreign Agricultural Trade Statistical Report, Calendar Year 1975.*

Two for One



Two for one may become a better bet for livestock producers as twinning technology ushers in more predictable and less risky results.

Currently, few cattle breeders get twins for their efforts, as the natural birth rate of twin calves is less than 1 percent for Hereford and Angus, the two most predominant beef breeds in the U.S. Two other breeds—Charolais and Simmental—have somewhat higher twinning rates (3.2 and 4.6 percent, respectively), but still hardly a large share.

Over the years, various researchers and cattlemen have been trying to breed in a higher incidence of twinning in beef cattle—a trait they all agree is inherited. But they acknowledge that the ability of the parent to transfer the trait to the offspring is low.

More problems. Twins, though, while presenting the livestock producers with double the investment, also present problems.

Pregnancy complications rank high on the list. For example, the conception rate for cows with multiple ovulations is only half that of cows with single ones. Also, abortion rates are 3-4 times higher for cows with twins. Too, more cows with twins die from pregnancy complications than cows carrying only one calf.

Another problem is that of sterility among some of the female twin calves. About half the females born as twins are co-twins with males, and almost all these females are sterile.

A third problem is that of nursing. First of all, the mother of twins must be a good milk producer for she will have to feed an additional 300-plus pounds of calf. And since this is a taxing feat, she will probably lose weight and may therefore take longer to rebreed.

Possible economic plus. Despite the drawbacks of twinning, researchers and livestock producers see a possible economic advantage, particularly if some of the problems could be ironed out. For although twins have lighter weights at birth than do single calves, by maturity their weights are about the same.

One step toward induced twinning has been hormone injections. Although these have been successful in producing more multiple births, they are difficult to control in that the hormones sometimes produce triplets, quadruplets, or even quintuplets—births in which the death rates are significantly higher than for twins or singles.

Another method offering greater promise is embryo transfer, where a single fertilized egg is transferred to a bred cow or two fertilized eggs to an unbred cow. The first method has been the most successful since the survival rate of the fertilized eggs is greater. Currently, most of the eggs are obtained form heifers bred prior to slaughter.

Egg transfer advantages. Advantages of the egg transfer method over natural twinning are:

(1) One fertilized egg in each horn of the cow's uterus is more likely to survive than two eggs in one horn (as occurs in natural twinning).

(2) Since the cow is identified as carrying twins, additional feed and attention can be given her during pregnancy.

(3) Those cows which appear most likely to be able to care for twins can be selected.

Although egg transfer by surgical means currently has a much higher success rate than nonsurgical transfer, the day may not be too far in the future where a farmer may routinely call in a breeding technician to do egg implants right on his farm. Progress, although slow, is being made toward upping the nonsurgical success rate.

Many-sided issue. With the twinning technology on the horizon, several new questions arise, however:

(1) How do nutrient requirements differ for cows pregnant with or nursing twins?

(2) How much milk is needed to support twins?

(3) What precautions are needed at calving time?

(4) How should the twins, born smaller than singles, be managed and supplemented?

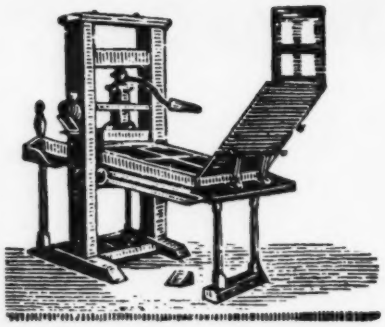
(5) What growth rates, carcass characteristics, and breeding traits can be expected of calves born as twins?

(6) What does a twinning technology mean to the organization of the livestock industry, supply of beef, demand for feed, returns to producers, and consumer meat prices?

[Based on "Assessment of Twinning in Beef Cattle," Speech by Virden L. Harrison, National Economic Analysis Division, stationed at Clay Center, Nebr., given at the Workshop on Technology Assessment, Washington, D.C., April 20-22.]

Recent Publications

Single copies of the publications listed here are available free from The Farm Index, Economic Research Service, Rm. 1664–So., U.S. Department of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university. For addresses, see July and December issues of The Farm Index.



Solid Waste Management Systems in the Rural Southeast. Jesse R. Russell, Natural Resource Economics Division. AER-333.

As part of an overall study of rural solid waste systems in the southeastern United States, this report describes the types and costs of 63 collection and 40 disposal systems in use. In each case, costs exceed revenues. To cut costs and increase efficiency, the study suggests consolidating the small systems into larger, area-wide operations.

Economics of Agriculture: Reports and Publications Issued or Sponsored by USDA's Economic Research Service, October 1966-June 1974. Economic Research Service. ERS-368 and Supplements 1-6.

By combining previously published bibliographies, this publication brings together a listing of reports put out by ERS during October 1966-June 1974. The listing covers all published material on agricultural economics and related socioeconomic issues that are of more than temporary interest. It does not, however, assure availability of any of the citations, although reference copies can usually be found in libraries.

Economic Impact of Water Pollution Control Regulations on the Tomato Processing Industry. Peter M. Emerson, National Economic Analysis Division. AER-334.

How the Federal Water Pollution Control Act Amendments of 1972 will affect the tomato processing industry is the focus of this study. The Act calls for uniform effluent limitations and requires that municipalities establish pretreatment standards for waste and that industrial users share in the costs. These control regulations are expected to speed up the decline of the tomato processing industry in the East and Midwest (as many small plants close) and to up prices of tomato products.

Indices of Agricultural Production for the Far East and Oceania, Average 1961-65 and Annual 1966-75. Foreign Demand and Competition Division. Statis. Bul. 555.

Through 25 tables, this report reviews the agricultural production of the Far East and Oceania for the past 10 years. Data are given both by commodities and by region and country. The indices of agricultural production in this publication reflect recent changes made in foreign cereal production for the last 25 years.

Managing Buffer Stocks To Stabilize Wheat Prices. Jerry A. Sharples, Rodney L. Walker, and Rudie W. Slaughter, Jr., Commodity Economics Division. AER-341.

A wheat buffer stock simulation model is used to add random deviations of wheat yields and exports to projected supply and demand conditions for 1976-82. The result is a useful analytical tool for policy analysis—especially for the analysis of questions about price and income stability where deviations of production and use from the mean, rather than the value of the mean, are of primary interest.

Analyzing the Feasibility of Rural Rental Apartments in the Great Plains: A Guide for Local Decisionmakers. Joseph R. Schmidt and Gerald A. Doeksen, Economic Development Division, Stationed at Oklahoma State University; Jack Frye, Extension Service; and John C. Maxey, Farmers Home Administration.

A budget analysis is developed which can aid in evaluating proposed rental apartments in rural areas. The analysis uses average construction and operating costs computed from data obtained from FmHA on existing rural rental units in western Oklahoma. Alternative apartment sizes, types of structure, and rental rates are evaluated.

Egypt: Major Constraints to Increasing Agricultural Productivity. U.S. Department of Agriculture, in cooperation with U.S. Agency for International Development and the Egyptian Ministry of Agriculture. FAER-120.

With some background information, this report presents the findings and major recommendations of the Egyptian-U.S. Agricultural Sector Assessment Team—a team of 10 technicians assigned by USDA to appraise the major constraints to increasing agricultural productivity in Egypt. Major emphasis is given to soil and water management on both old and new lands, and needed improvement in the livestock industry. Other topics include pricing policy, improved research, extension and teaching, agribusiness and marketing, and rural development.

Economic Trends

[1]Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2]Average annual quantities of farm food products purchased by urban wage earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. [3]Annual and quarterly data are on 50-State basis. [4]Annual rates seasonally adjusted second quarter. [5]Seasonally adjusted. [6]As of March 1, 1967. [7]As of March 1, 1975. [8]As of November 1, 1975. [9]Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Source: U.S. Dept. of Agriculture (Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

Item	Unit or Base Period	1967	1975 Year	1976 July	1976 May	1976 June	1976 July
Prices:							
Prices received by farmers	1967=100	—	186	191	191	196	196
Crops	1967=100	—	201	203	198	211	216
Livestock and products	1967=100	—	172	181	185	184	178
Prices paid, interest, taxes, and wage rates	1967=100	—	181	183	193	195	195
Family living items	1967=100	—	166	168	174	175	177
Production items	1967=100	—	182	184	196	199	199
Ratio[1]	1967=100	—	102	104	99	101	101
Wholesale prices, all commodities	1967=100	—	174.9	175.7	181.8	183.1	184.3
Industrial commodities	1967=100	—	171.5	171.2	180.4	181.3	182.6
Farm products	1967=100	—	186.7	193.7	192.6	196.5	196.9
Processed foods and feeds	1967=100	—	182.6	184.6	179.9	181.8	182.6
Consumer price index, all items	1967=100	—	161.2	162.3	169.2	170.1	—
Food	1967=100	—	175.4	178.6	180.0	180.9	—
Farm Food Market Basket: [2]							
Retail cost	1967=100	—	173.6	178.8	175.2	175.9	—
Farm value	1967=100	—	187.0	199.5	181.9	183.4	—
Farm-retail spread	1967=100	—	165.3	165.7	170.9	171.1	—
Farmers' share of retail cost	Percent	—	42	43	40	40	—
Farm Income: [3]							
Volume of farm marketings	1967=100	—	115	116	91	115	119
Cash receipts from farm marketings	Million dollars	42,817	89,563	7,815	6,163	7,814	8,100
Crops	Million dollars	18,434	46,661	4,174	2,253	3,751	4,200
Livestock and products	Million dollars	24,383	42,902	3,641	3,910	4,063	3,900
Realized gross income [4]	Billion dollars	49.9	98.2	—	—	99.6	—
Farm production expenses [4]	Billion dollars	38.2	75.5	—	—	75.7	—
Realized net income [4]	Billion dollars	11.7	22.7	—	—	23.9	—
Agricultural Trade:							
Agricultural exports	Million dollars	—	21,894	1,532	1,842	1,824	—
Agricultural imports	Million dollars	—	4,295	762	843	1,020	—
Land Values:							
Average value per acre	Dollars	[6]168	[7]354	—	—	—	[8]381
Total value of farm real estate	Billion dollars	[6]181.9	[7]370	—	—	—	[8]398
Gross National Product: [4]	Billion dollars	796.3	1,516.3	—	—	1,673.0	—
Consumption	Billion dollars	490.4	973.2	—	—	1,064.6	—
Investment	Billion dollars	120.8	183.7	—	—	236.3	—
Government expenditures	Billion dollars	180.2	339.0	—	—	363.1	—
Net exports	Billion dollars	4.9	20.5	—	—	9.1	—
Income and Spending: [5]							
Personal income, annual rate	Billion dollars	626.6	1,249.7	1,252.0	1,362.9	1,368.9	—
Total retail sales, monthly rate	Million dollars	26,151	48,702	49,411	52,868	53,847	53,205
Retail sales of food group, monthly rate	Million dollars	5,759	10,977	11,241	11,629	11,728	11,512
Employment and Wages: [5]							
Total civilian employment	Millions	74.4	[9]84.8	[9]85.0	[9]87.7	[9]87.5	[9]87.9
Agricultural	Millions	3.8	[9]3.4	[9]3.4	[9]3.3	[9]3.3	[9]3.3
Rate of unemployment	Percent	3.8	8.5	8.7	7.3	7.5	7.8
Workweek in manufacturing	Hours	40.6	39.4	39.4	40.2	40.2	40.1
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	4.81	4.81	5.12	5.15	5.17
Industrial Production: [5]	1967=100	—	118	118	130	130	130
Manufacturers' Shipments and Inventories: [5]							
Total shipments, monthly rate	Million dollars	46,449	82,724	83,029	94,087	94,028	—
Total inventories, book value end of month	Million dollars	84,655	146,574	147,189	149,039	150,777	—
Total new orders, monthly rate	Million dollars	46,763	81,351	83,304	95,494	95,501	—

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